

CLAIMS

1. A method comprising:
providing a voice user interface that interacts with a user at a first level of formality;
5 monitoring a history of user interaction with the voice user interface; and
adjusting the voice user interface to interact with the user with a second level of formality based on the history of user interaction.

2. The method of claim 1, wherein the voice user interface is adjusted to
10 interact in a less formal manner as the history of user interaction increases.

3. The method of claim 1, wherein monitoring comprises monitoring the user's interaction with the voice user interface during a single interactive session.

4. The method of claim 1, wherein monitoring comprises the user's
15 interaction with the voice user interface during multiple interactive sessions.

5. The method of claim 1, wherein monitoring comprises measuring a user interaction level based on time spent by the user interacting with the voice user interface.
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6. The method of claim 1, wherein monitoring comprises measuring a user interaction level based on a number of interactions the user has with the voice user interface.

7. The method of claim 1, further comprising:
25 recording information about user interactions with the voice user interface in a user interface history log; and

updating the information recorded in the user interface history log as the user continues to interact with the voice user interface.

8. The method of claim 1, wherein the second level of formality provides a
5 more intimate relationship between the user and the voice user interface.

9. The method of claim 1, wherein the second level is less formal than the first level.

10 10. A method of providing a voice user interface comprising:
creating a user profile having preference information for a user; and
providing a virtual host with a consistent personality defined in accordance with
the user profile.

15 11. The method of claim 10, wherein the preference information comprises information defining a tone of voice for the virtual host.

12. The method of claim 10, wherein the preference information comprises information defining a speed of voice for the virtual host.

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13. The method of claim 10, wherein the preference information comprises information defining a background for the virtual host.

14. The method of claim 10, wherein the preference information comprises
25 information defining a sex for the virtual host.

15. The method of claim 10, wherein the preference information comprises information defining an accent for the virtual host.

16. The method of claim 10, wherein the preference information comprises information defining a conversational style for the virtual host.

5 17. The method of claim 16, further comprising:
determining a history of user experience with the voice user interface; and
adjusting the conversational style based on the history of user experience.

10 18. The method of claim 16, wherein the conversational style is associated with a formality level, and wherein adjusting comprises reducing the formality level as the history of user experience increases.

15 19. A method of providing voice user interface services comprising:
providing a user with an interactive voice user interface;
monitoring the interaction of the user with the voice user interface to determine a user experience level; and
providing the user with an extended menu of options, if the user experience level has not reached a predetermined threshold.

20 20. The method of claim 19, further comprising:
providing the user with a shortened menu of options, if the user experience level has reached the predetermined threshold.

25 21. The method of claim 19, wherein providing the user with the extended menu comprises:
playing a list of content domains; and
prompting the user to select a content domain from said list to visit one of said content domains.

22. The method of claim 20, wherein providing the user with the shortened menu comprises:

5 prompting the user to provide a voice command associated with one or more content domains to visit one of said content domains.

23. A voice user interface system comprising:

an ordered data structure including one or more domains, each domain associated with respective content;

10 a grammar for accessing content from the ordered data structure; and

a user profile for storing information about a user's preferences and history of interaction with the system;

wherein the grammar dynamically changes based on the information stored in the user profile to provide a natural interaction experience for the user.

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24. The system of claim 23, further comprising one or more virtual hosts for interacting with a user while accessing content from the ordered data structure.

25. The system of claim 24, wherein the user has an option of selecting from
20 said one or more virtual hosts.

26. The system of claim 25, wherein said one or more virtual hosts each has a respective personality based on the information stored in the user profile.

25 27. The system of claim 26, wherein said one or more virtual hosts each has a respective conversational style based on the user profile information, and wherein the user may update the user profile information to modify the respective conversational style of said one or more virtual hosts.

28. The system of claim 23, wherein the user profile includes information about a user's experience level in interacting with the system.

29. The system of claim 28, further comprising an interactive menu associated with said one or more domains, wherein the interactive menu dynamically changes based on the user's experience level.

30. The system of claim 29, wherein the interactive menu includes a plurality of prompts for delivery to the user, each having a respective length, and wherein any prompt delivered to the user depends on the user's experience level.

31. The system of claim 28, wherein the system interacts with the user in a relatively formal manner, unless the user's experience level is above a predetermined threshold.

32. The system of claim 31, wherein the system interacts with the user in a less formal manner as the user's experience level increases.

33. A method of providing a voice user interface comprising:
providing a user with a first option to visit one of a plurality of domains by uttering a voice command associated with one of the plurality of domains, the plurality of domains contained in an ordered data structure, each domain comprising respective content available for presentation to the user;

visiting a first one of the plurality of domains automatically, if no response is provided by the user for the first option;

providing the user with a second option to hear content of the first domain; and

playing the content of the first domain, if no response is provided by the user to the second option.

34. The method of claim 33, wherein the plurality of domains are visited in an order defined in accordance with user preference information recorded in a user profile.

35. The method of claim 33, wherein the plurality of domains are visited in an order defined by frequency of prior visits by the user to each domain.

36. The method of claim 35, wherein domains visited most frequently during prior visits are visited first.

37. The method of claim 35, wherein the domains visited least frequently during prior visits are visited first.

38. The method of claim 33, further comprising:
playing the content of a second domain after playing the content of the first domain, unless the user provides a response to the contrary.

39. The method of claim 33, wherein at least the first domain includes at least a sub-domain, the method further comprising:
visiting the sub-domain of the first domain automatically, unless a response is provided by the user to the contrary.

40. The method of claim 33, further comprising:
receiving a user request to visit a second domain, the user request containing a term associated with the second domain; and
visiting the second domain in response to the user request, if the user request is recognized in accordance with an interface grammar having a vocabulary which includes the term.

41. The method of claim 40, further comprising:

providing the user with a list of one or more of the plurality of domains, if the user request is not recognized.

42. The method of claim 40, further comprising:

5 determining a reason for not recognizing the user request, if the user request is not recognized in accordance with the interface grammar.

43. The method of claim 42, wherein an acoustic model is associated with the user request, further comprising:

10 adding the acoustic model associated with the user request to the vocabulary, if the request is improperly not recognized.

44. The method of claim 33, wherein providing the user with the first option or the second option each comprises:

15 determining a history of user experience in interacting with the voice user interface;

playing a first prompt at a first formality level, if the history of user experience reaches a predetermined threshold; and

20 playing a second prompt at a second formality level if the history of user experience does not reach the predetermined threshold.

45. The method of claim 33, further comprising:

25 determining a history of user experience in interacting with the voice user interface, wherein the first option is not provided to the user if the history of user experience reaches a predetermined threshold.

46. The method of claim 33, further comprising:

monitoring user interaction with the voice user interface;

recording in a profile a history of the user interaction; and

modifying a behavior of the voice user interface based on the history to provide an interface ambiance emulating a natural conversational style.

47. A voice user interface system comprising:

5 an ordered data structure including one or more domains, each domain associated with content belonging to one or more categories;

a grammar for accessing content from the ordered data structure, the grammar comprising:

10 vocabulary comprising a plurality of terms, at least one term associated with at least one respective domain; and

a set of rules for visiting said one or more domains or for playing content therein, each rule corresponding to one or more respective terms;

and

a user profile comprising:

15 a user preference log for storing information about a user's preferences for accessing content in said one or more domains; and

a user interaction history log for storing information about the user's history of interaction with the system;

20 wherein a command provided at a recognition instance is processed against the terms included in the vocabulary for recognition, and if a match is found between the command and a term, then the respective domains in the ordered data structure are visited and the content of the respective domains is played in accordance with the rule corresponding to the matched term, using a conversational style that dynamically changes based on information included in the user profile.

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48. The system of claim 47, wherein at a recognition instance a subset of the vocabulary is searched, the subset including terms corresponding to the domain visited at the recognition instance.

49. The system of claim 48, wherein the vocabulary comprises a global vocabulary which is available at any recognition instance.

50. The system of claim 49, wherein the global vocabulary includes a term for
5 accessing a first content in a respective domain.

51. The system of claim 50, wherein the global vocabulary includes a term for accessing a last content in a respective domain.

10 52. The system of claim 47, wherein the user preference log includes information about the order of visiting one or more domains.

53. The system of claim 52, wherein if no commands are provided by a user at a recognition instance, then a domain in the ordered data structure is visited automatically
15 in the order provided in the user preference log.

54. The system of claim 47, wherein the system monitors the domains visited by a user, and wherein if no command is provided at a recognition instance, an unvisited domain is visited.

20 55. The system of claim 47, wherein the user interaction history log includes information about the user's experience level with the system and the conversational style is associated with a formality level that changes based on the user's experience level.